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Affective learning: the anxiety construct in adult learners

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Abstract

In teaching and learning contexts, the general characteristics of the anxiety construct are similar among anxious learners. However, adult learners are individually different; they are uniquely involved with anxiety in accordance with their thoughts, ideas, beliefs, and expectations. As educators, one of our major roles is to lessen our learners' fears and anxieties. This paper draws specific attention of administrators, educators, and teachers to the importance of *psychology* and *physiology* of anxiety in regard to affective learning. Helping educators and learners to become aware of teaching and learning challenges especially characteristics of anxiety will promote learning in adult learners and will enhance teaching and learning processes.

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1. Introduction

Despite wide-ranging differences in culture, ethnicity, class, wealth, age, gender, and sex, there are universalities among human beings, and human bodies, as kindred entities, often show similar signs and symptoms to similar life experiences. The language of the body is connected to the psychology and physiology of its existence, a major part of which relates to emotions. The physiological and psychological correlates of emotions seem to be nearly the same among all individuals. Of course, there are cultures where emotional expression is accepted and cultures where emotional expression is suppressed. Even within cultures, these binary emotional expressive values can be gender-oriented. However, the anxiety construct that manifests itself in common universal psychological and physiological patterns is one of the most common emotional attributes that can seriously affect an individual's life, although its effects may differ from one individual to another (Bigdeli & Bai, 2009).

Anxiety is “the official emotion of our time” (Schlesinger, 1970 as cited in Bigdeli & Bai, 2009) and “one of the most important concepts in psychoanalytical theory” (Hall, 1954 as cited in Bigdeli & Bai, 2009) that often seriously and negatively affects adult learners in teaching and learning contexts. The critical role of anxiety in adult learning is undeniable and to help adult educators and learners to handle it in teaching and learning contexts is of major importance.

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Anxiety (*angst* from the Latin *angere*) which means to torment (Berube et al., 1997) can be examined from different disciplinary perspectives. In this paper, physiological and psychological aspects of this construct are the focal point and a bi-dimensional approach to understanding and working with anxiety in adult learners is recommended. Any substantive discussion of anxiety presupposes some understanding of the psychology and physiology of emotions and anxiety; therefore, it is important for educators to deal with this complex phenomenon in order to develop a framework to help their adult students in their struggle with this construct and to become more successful in teaching and learning contexts. Poorly equipped adult learners are condemned to suffer and prolong their learning; and those who are well equipped and employ appropriate coping mechanisms adapt better to this construct.

At the very beginning, I will define psychology and physiology to give a better understanding of these fields to present a general overview of anxiety. *Psychology*, like education, is the field that is concerned with mental processes and behavior (Berube et al., 1997), and *physiology* provides researchers, especially educationalists, a common frame of reference to deal with “the functions of the living organism and its parts, and of the physical and chemical factors and processes involved” (Dorland’s Medical Dictionary, 2007). In addition, physiology assesses the functions of the body organs and their interaction with the environment (Ziada, 2000). Finally, *psychophysiology* is a field that is devoted to understanding of the physiology of behavior. The importance of physiology of behavior in teaching and learning contexts is that it could be used to focus on different aspects of physiological behavior during the experience of anxiety and its effects on successful teaching and learning especially in adult learners.

2. The Anxiety Construct

Among emotions, anxiety affects individuals in a positive (excitatory) or negative (inhibitory) way. Both ways lead to unwanted unpleasant imbalance in the normal state of mind and body² although they lead to very different results. Anxiety is an inseparable part of human life, and it greatly influences personal and social functioning. The causes of anxiety are intra-personal (related to individual characteristics), inter-personal (involving relationship with others), and extra-personal (under the influence of environmental factors). Anxiety construct as an emotion has a great influence on learning (Bourne, et al., 1986; Hertel & Hardin, 1990; Rathus, 1990), information processing, and memory (Ellis, 1990; Hedl, 1986; Hertel & Hardin, 1990). Acute emotions, e.g. anxiety, are reactions to status of goals in everyday adaptation encounters and in our over all lives, due to the interplay between internal mental processes and external environmental factors (Lazarus, 1991).

Aubrey Lewis (1967) characterized anxiety as a subjective unpleasant emotional state accompanying fear, terror, horror, alarm, fright, panic, trepidation, dread, and scare, in reaction to a recognizable threat. It follows bodily sensations such as dryness of mouth, sweating, horripilation³, tremor, vomiting, palpitation, giddiness, abdominal pain, chest pain, tightness in the throat, difficulty in breathing, weakness in the legs, running in panic, agitation, screaming, sudden defecation and other physiological and biochemical functions (cited in Kelly, 1980). Also, the state of anxiety is an immediate, transitory emotional experience with immediate cognitive effects that is marked by feelings of worry, apprehension, nervousness, and tension (Spielberger, 1983) manifested in response to a particular situation (e.g. teaching and learning contexts) (cited in MacIntyre, 1995).

Moreover, Gower (2004) has found that anxiety results in deficient inductive reasoning, slowed decision latencies, shallow depth processing, reduced memory span, impaired attention control, biased memory recall for negative event, mis- or non-achievement, incapability, and mal-performance. The behavioural dimension of anxiety includes reactions such as increases in sympathetic nervous system arousal, inhibited actions, and attempts to escape the situation (Levitt, 1980, cited in MacIntyre, 1995).

² Homeostasis is used to describe this “normal” or “neutral” state.

³ the bristling of body hair

2.1. *Human physiology*

The human body has both self and species preservative systems that are under the control of the autonomic and hormonal systems. These systems help us mentally, physically and emotionally to become aware of others and ourselves (Wang, 2005). Kelly (1980) believed emotional states lead to involuntary or autonomic adaptation of the body. Sympathetic and parasympathetic nervous systems are involved in this process. Reactions to emotions in the majority of people are mostly caused by sympathetic activity. The major neural systems mediating anxiety are the neocortex, the limbic system, and the reticular activating system in the brainstem (Kelly, 1980). The limbic system controls sympathetic and parasympathetic divisions of the autonomic nervous system and endocrine system including anterior and posterior pituitary glands, and integration of behaviors and emotions involved in perceptions of different life situations; any damage to its structures severely impairs learning ability, emotional reactions, coding, as well as storing and recalling memories (Janson Cohen & Wood, 2000; Kelly, 1980, Marieb, 2001; Silverthorn, 2004; Van de Graaff, Fox, & Lafleur, 1997; Ziada, 2000).

Anxiety, like other emotions, consists of behavioral, autonomic, and hormonal responses. These bring catabolic changes in the body, which move the body's energy resources. In anxious states the sympathetic nervous system becomes active, and adrenal glands secrete adrenaline, noradrenaline, and steroid hormones. Under emotional and physical stress, secretion of these hormones is increased (Carlson, 2002; Levitt, 1990; Selye, 1974). In addition, anxiety increases sympathetic stimulation with an increase in heart rate, bundle of His⁴ conductivity, and contraction of heart muscles that lead to high blood pressure. Anxiety can also produce hyperventilation, shallow breathing, disorganized respiratory rhythms, and breathlessness (Kelly, 1980). The other crucial hormone that affects anxiety is oxytocin, which is a neurotransmitter in the brain and a hormone secreted from posterior pituitary gland that is crucial for the self-preservative system. In the context of social support, oxytocin is more effective in reducing anxiety (Gilbert, 2005).

In the next section I will discuss three influential psychological approaches that have made major contributions to the understanding of anxiety.

2.2. *Human psychology*

According to Freud, anxiety is a common experience among all higher order species (Fischer, 1970). Additionally, Freud viewed human personality as holding three parts: the id, the ego, and the superego; the ego is the place of anxiety that reasons, thinks, solves problems, is human and maintains emotional balance. It prevents the conscious experience of anxiety arising from id and super ego threat (Fischer, 1970; Levitt, 1990).

Neo-Freudian scholars like Sullivan, Horney, Fromm, and Kardiner "...changed the orientation of psychoanalysis from biological and instinctual to the cultural and environmental" (Levitt, 1990, p. 21); and, believed that human personality development is more social than biological (Levitt, 1990).

The Freudian and Neo-Freudian schools assumed that heredity is an influential factor affecting anxious states, although the Neo-Freudian scholars argued that environment, people, and culture are most important in manifestations of anxiety as a human social phenomenon that results from relations with others (Fischer, 1970).

The third major approach to anxiety is the ego-psychological one. Among these scholars, Jacobson (in Fischer, 1970) puts emphasis on the impacts of ego development on affects and believes that anxiety is a signal and an adaptive phenomenon that is required for equilibrium of the organism (Fischer, 1970).

⁴ The bundle of His is a collection of heart muscle cells specialized for electrical conduction that transmits the electrical impulses from the Atrio Ventricular node (located between the atria and the ventricles) to the point of apex of the fascicular branches. It provides the electrical conduction between the atria and ventricles. The electrocardiogram (ECG) deflection of His bundle is used as a marker to distinguish normal from abnormal conduction. These specialized muscle fibers in the heart were named after the Swiss cardiologist Wilhelm His, Jr. who discovered them in 1883 (Luderitz, 2005).

Discussion

The effects of anxiety are long lasting; even when the stressor is deleted, its effects remain. We remember our bad feelings (Selye, 1974) or good feelings about a particular situation even years later. We experience our emotions, such as happiness, hatred, anxiety, sorrow, sadness, through our body. By remembering our emotional experiences, our minds trigger the same feelings in our body. Our mind and body are closely related to each other and the experience of embodiment that adult learners experience is the result of the interaction.

In any teaching and learning context, considering the psycho-physiological states of individuals is crucial, because it determines their overall bodily energy and the kind of emotional waves that spread in the immediate environment. Psycho-physiological consciousness plays an important role in these contexts. It helps teachers to gain insight about the impact of their adult student's mental states on their bodies and vice versa. Recognition of these impacts and their consequent changes are necessary in all human interactions, as well between teacher and learner. Ignorance, neglect or lack of psycho-physiological recognition in educational settings will lead to an unsuccessful teaching and learning context. Acquiring knowledge and understanding about this issue is of crucial importance to prevent this unwanted disturbing state of mind and body in adult learners.

To become aware of psycho-physiological influences of anxiety on adult learners in educational settings, different means are available including learners' self-report, educator's observation of physiological changes in learners, and the educator's perceptions of conditions that arouse emotional response in learners, as well as physiological measures of state anxiety (e.g. ECG, EEG, Galvanic Skin Response).

Conclusion

Anxiety is commonly experienced among human beings, and is considered a high-intensity affective characteristic (Anderson & Bourke, 2000); although small amounts of anxiety can be useful, too much anxiety leads to physical or emotional breakdown, and inter-personal difficulties. Anxiety is part of our humanity and to acknowledge its importance is crucially important in different contexts, especially teaching and learning ones. Whenever human beings encounter unsafe and insecure environments, their minds (soul, psyche), bodies (physic, physiology), and behavior (attitude, belief system, philosophy) become involved and afflicted. Therefore, it is necessary for those who are involved in teaching and learning situations to be aware of the disciplines that have studied anxiety and to consider its immense influences on mental health, physical health, social relations, understanding, motivation, and learning of adult learners.

In this regard, physiology and psychology share a common border, and together they impact learning anxiety that is a state of mind, body, and behavior, which emerges from human nature in confrontation with the teaching and learning environments, if anxiety is not dealt with properly, it will become the dominant second nature of adult learners and will influence their well-being. The importance of psychophysiology is that it influences information processing and the performance of adult learners. An uncomfortable body does not act as an appropriate medium for the mind. Psycho-physiological imbalances due to learning anxiety not only influence the body but also the mind, and finally hamper learning. Therefore, it is recommended that psycho-physiological aspects of anxiety be considered in curriculum design and teacher training programs.

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